

2. Scarring Effects of COVID-19 and Post-pandemic Philippine Economic Recovery¹²⁰

The Philippine economy was severely affected by the COVID-19 pandemic. The disruptions caused by harsh lockdowns, impaired the balance sheets of firms, reduced investment, and interruptions in global supply chains had weakened the country's economic fundamentals and lowered its potential growth after the pandemic. This selected issue estimates the pandemic-related scarring effects on the Philippines and suggests that the country's potential growth has been lowered by about 1.69 percentage points, the average of 2022 to 2024, dampened by slower growth in physical capital stock, total factor productivity (TFP) and human capital compared with the pre-pandemic period.

Introduction

1. Philippine growth was dragged down by the outbreak of the COVID-19 pandemic, and some segments of the economy have not recovered their pre-pandemic levels yet.

Strict pandemic-related restrictions, a sharp reduction in investment, and global supply chain interruptions hit the services-based Philippine economy hard, resulting in a 9.5 percent contraction in 2020. Although the economy has experienced a strong post-pandemic recovery since its re-opening in 2022, private investment in H1 2024 has not yet returned to levels recorded before COVID-19. The value-added of some industries, such as accommodation and food services activities, real estate, and construction, were also below their pre-pandemic levels. The slower recovery in specific sectors could partly reflect the scarring effects of the COVID-19 pandemic. Against this backdrop, the current study seeks to estimate how COVID-19's scarring effects have affected production factors and potential growth in the Philippines in the post-pandemic period of 2022 to 2024.¹²¹ This study also discusses the implications of the scarring effects on long-term growth potential.

COVID-19 Scarring Effects on Philippine Growth Potential

2. Results of the estimation suggest that the Philippines' potential growth was lowered during and after the pandemic.

To estimate potential output, this study employs an augmented Cobb-Douglas production function approach, which enables the estimation and decomposition of the scarring effects into production factors, such as labor, human capital, physical capital and total factor productivity (TFP). Box A2.1 details the methodology and data sources.¹²² The results show that the estimated potential output in the post-pandemic period of 2022-2024 (actual scenario) fell below the pre-pandemic trend (counterfactual scenario) (Figure A2.1). Potential growth, defined as the growth rate of potential output, fell to an average of 5.4 percent for 2022-24 from the average of 6.2 percent for 2017-19.¹²³ This finding is lower than the potential growth of the pre-pandemic trend (Figure A2.2). Lower potential growth in 2022-24 could be explained by the scarring effects, which is estimated by the difference in potential growth between the actual outcome and the pre-pandemic trend under the counterfactual scenario.

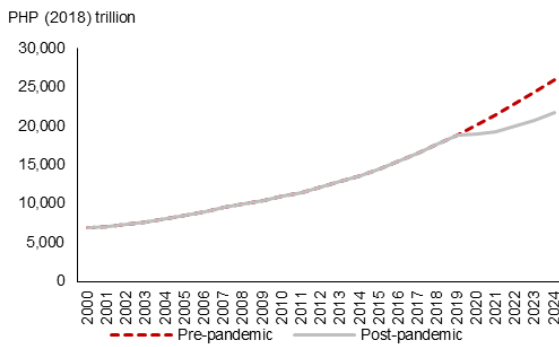
¹²⁰ Prepared by Andrew Tsang, Senior Economist; and Sopheawattey San, Associate.

¹²¹ Given the economy was sharply distorted during the pandemic period of 2020-2021, this study focuses only on the post-pandemic period. The actual data is obtained only until H1 2024, and H2 2024 figures are AMRO's forecasts.

¹²² The methodology is the same as that used by Choi *et al.* (2021) for estimating potential growth.

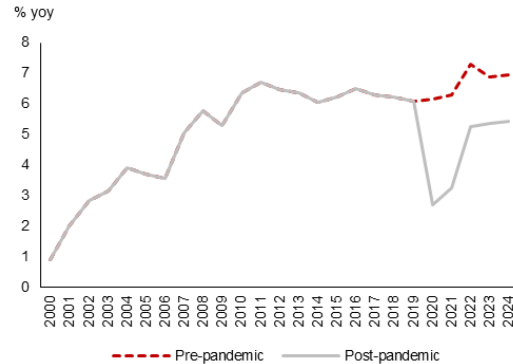
¹²³ The estimated potential output grew by a low 3.0 percent during the pandemic in 2020-2021.

Figure A2.1. Potential Output



Source: Philippine Statistics Authority (PSA), Penn World Table (PWT); United Nations Development Programme (UNDP); AMRO staff calculations
Note: 2024 figures are forecasts.

Figure A2.2. Potential Growth



Source: PSA, PWT; UNDP; AMRO staff calculations
Note: Potential growth is defined as the growth in potential output. 2024 figures are forecasts.

Assessing Key Drivers of Philippine Potential Growth

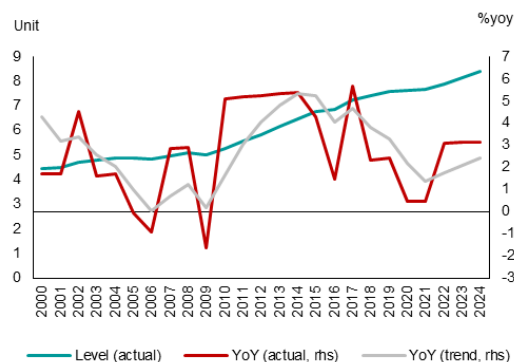
3. Philippine employment dropped sharply in 2020 due to the strict lockdown, but has recovered rapidly since 2021 and surpassed pre-pandemic levels. Total employment declined by 6.1 percent from 41.9 million people in 2019 to 39.4 million in 2020, while the labor force participation rate fell to 59.5 percent in 2020 from 61.3 percent, reflecting the effects of the various community quarantine restrictions, business closures and physical distancing measures (Figure A2.3). The lockdown pushed the unemployment rate to its highest, of 17.6 percent in Q2 2020. In particular, high-contact sectors, medium-skill occupations and in-wage jobs were more vulnerable at the onset of the pandemic.¹²⁴ However, employment has bounced back strongly since 2021 and surpassed its pre-pandemic level. Nevertheless, job quality remained weak, reflecting the double-digit underemployment rate, lower numbers of managerial and professional workers, and a higher share of self-employed workers, which would lower the TFP and will be discussed below.

Figure A2.3. Growth of Employment and Labor Force



Source: PSA; AMRO staff calculations
Note: 2024 figures are forecasts.

Figure A2.4. Human Capital Stock Estimates



Source: PSA; PWT; UNDP; AMRO staff calculations
Note: 2024 figures are forecasts.

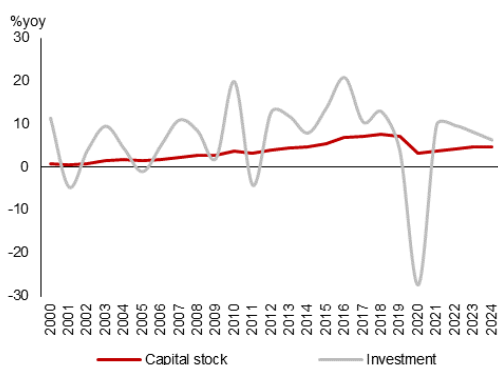
4. Human capital stock, measured by expected years of schooling and its returns, grew slower during the pandemic compared with pre-COVID levels, largely due to the suspension of face-to-face schooling. Human capital, which enhances labor productivity, is built through improvements in health and education, contributing to the accumulation of

¹²⁴ Debuque-Gonzales, Margarita; Epetia, Ma. Christina F.; Corpus, John Paul P. 2023. "Effects of the COVID-19 Pandemic on Employment and Wages in the Philippines," PIDS Discussion Paper Series, No. 2023-10, Philippine Institute for Development Studies (PIDS), Quezon City.

skills, knowledge and experience over a person’s lifetime (World Bank Group, 2023). Growth in the Philippines’ human capital decreased significantly in 2020-2021, primarily driven by the lower returns on education due to the pandemic, before recovering gradually from 2022 (Figure A2.4). However, post-pandemic human capital growth is slower than the pre-pandemic period, partly due to the high learning losses during the pandemic,¹²⁵ while the digital divide has exacerbated the difficulties of low-income students’ access to education.¹²⁶

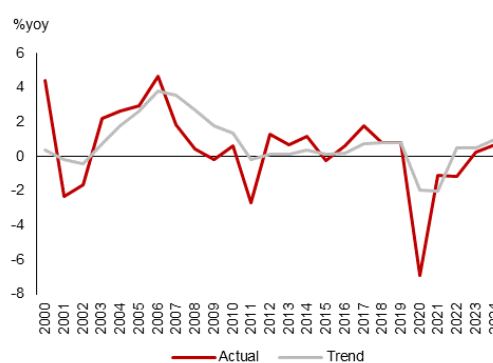
5. Physical capital stock in the Philippines was severely affected by the pandemic, and its growth momentum is still weaker than the pre-pandemic period due to firms’ impaired balance sheets and weak sentiment. The accumulation of physical capital stock decelerated during the pandemic because of a sharp decline of 34 percent in investment in 2020. It has since shown only gradual recovery over the past three years (Figure A2.5). Firms’ balance sheets weakened due to losses incurred during the pandemic. According to AMRO (2024b), the share of debt-at-risk,¹²⁷ mainly due to those losses, in the Philippines’ non-financial corporates (NFCs) increased significantly from around 40 percent to above 70 percent in 2021,¹²⁸ although it has slowly declined since 2022. Meanwhile, the stock of FDI decreased by 21.3 percent in 2020 as foreign investors delayed projects and repatriated profits to manage the financial impacts of the pandemic on their operations. Nevertheless, the post-pandemic investment growth rate remains lower than the pre-pandemic period, although there is a procyclical nature of investment. The weak sentiment in private investment and FDI has slowed the accumulation of capital stock.

Figure A2.5. Investment and Capital Growth



Source: PSA; PWT; AMRO staff calculations
Note: 2024 figures are forecasts.

Figure A2.6. TFP Estimates



Source: PSA; PWT; UNDP; AMRO staff calculations
Note: 2024 figures are forecasts.

6. Estimates in this study indicate that TFP experienced a decline during the COVID-19 pandemic, although there has since been a recovery (Figure A2.6). Using the production function approach, TFP represents the portion of residuals from potential growth that traditional factors of production cannot account for. In this context, a narrative approach drawing on local news sources and relevant literature (Box A2.2) helps identify key drivers of the decline in TFP during the pandemic, attributing part of the pandemic’s lasting effects on

¹²⁵ A report from the Congressional Policy and Budget Research Department shows an estimated loss of 0.61 in learning-adjusted years of schooling (LAYS) in the Philippines, more than the average LAYS loss of 0.37 in ASEAN member states. By ADB estimates, students in Asia who were affected by school closures were estimated to have potentially lost about USD180 of annual income due to COVID-19, with some regions experiencing higher percentage declines than others; for example, East Asia saw USD771 less in annual earnings due to protracted school closures.

¹²⁶ The digital divide in the Philippines exacerbated inequalities in access to education. Students from low-income families, especially in rural areas, were less likely to have access to the necessary technology for remote learning. UNECSO *et al.* (2021) highlighted that many students lacked internet access, computers or even reliable electricity, further widening the gap between the ones who could continue learning and those who could not. This disparity in access is expected to result in a lower return on education for students from disadvantaged backgrounds, as their interrupted education would hinder their future earnings potential.

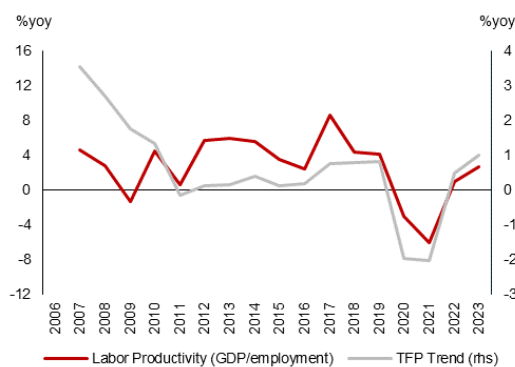
¹²⁷ AMRO (2024) defines firms that have debts with interest coverage ratios (ICRs) lower than 1.25 and/or debt service ratios (DSRs) lower than 1.0 as debt-at-risk firms, or financially stressed borrowers.

¹²⁸ According to the criterion of DSRs lower than 1.0.

TFP to temporary factors, such as reduced productivity. Indeed, the movement and growth in TFP estimates are qualitatively similar to those of the conventional labor productivity measure, defined as GDP divided by the number of employments (Figures A2.7, A2.8).

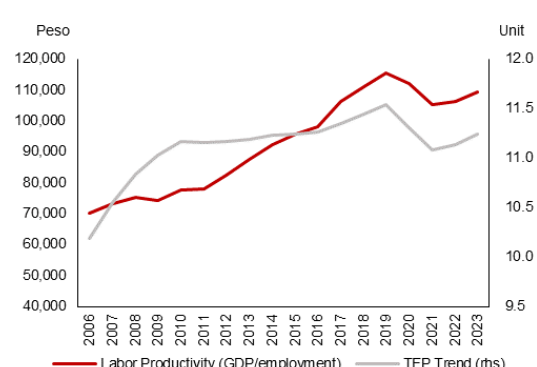
- **Temporary decline in productivity:** This is reflected in the deteriorated job quality. The pandemic's negative effects on health and well-being came at a significant cost and affected post-pandemic labor productivity recovery. Long-term productivity losses due to the direct and indirect health impacts of COVID-19 are estimated at PHP2.3 trillion (PDIS, November 2021). Meanwhile, the share of wage and salary workers and employers among the employed stayed at 63.8 percent in July 2024, lower than the 65.2 percent in January 2020. The share of vulnerable employment, including self-employment and unpaid family work, is still higher than in the pre-pandemic period and remains above 30 percent, although it has gradually improved in recent years.¹²⁹ While the government offers a range of skill training programs, the quality of job creation still lags behind due to poor institutional coordination, fragmented program design and weak monitoring systems, limiting their overall effectiveness in addressing labor market needs.

Figure A2.7. Labor Productivity and TFP



Source: PSA, PWT; UNDP; AMRO staff calculations

Figure A2.8. Growth in Labor Productivity and TFP



Source: PSA, PWT; UNDP; AMRO staff calculations

Additionally, in the long run, COVID-19 has exacerbated the influence of structural issues on TFP.

- **COVID-19 reinforced the impact of structural issues:** The pandemic not only highlighted but also reinforced existing structural issues in the Philippine economy. The country's reliance on outdated infrastructure and inefficient logistics networks became more apparent as supply chains were disrupted (UNCTAD, 2021). The pandemic has delayed infrastructure upgrading. Although the authorities have worked to improve the infrastructure, domestic infrastructure development is still hindered in the post-pandemic period¹³⁰ by a challenging business environment, deficiencies in planning, coordination, and financing, as well as a decline in private-sector participation in infrastructure projects.

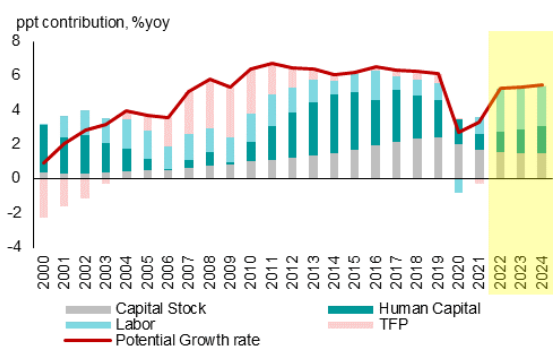
Sources of Scarring Effects on Philippine Potential Growth

¹²⁹ The share of vulnerable employment rose from 32.4 percent in 2019 to 34.6 percent in 2020 and has gradually improved to 32.9 in 2024 (year-to-date).

¹³⁰ Compared with peer economies in the region, investment in infrastructure in the Philippines has been relatively low, resulting in low capital stock (AMRO, 2023). The Philippines ranked below 55th in different infrastructure aspects among 67 economies in the World Competitiveness Report 2024 published by the IMD.

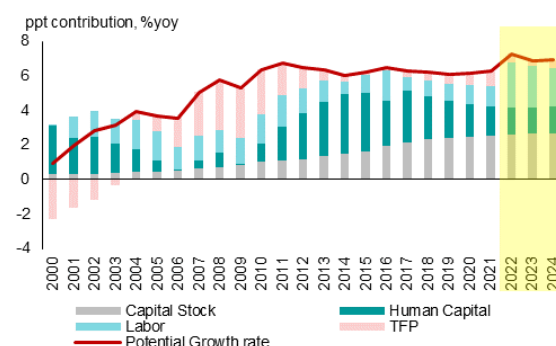
7. The empirical results suggest that two-thirds of COVID-19’s scarring effects on the Philippines’ potential growth are attributable to slower growth in physical capital, with the remainder due to weaker TFP and human capital. Following Jackson and Lu (2023), the scarring effects are estimated by comparing the differences in potential growth between the actual scenario (Figure A2.9) and the counterfactual scenario that assumes the pre-pandemic trend (Figure A2.10). Thus, the drop in potential growth could be further decomposed into the contributions of different factors of production (Box A2.1 gives details of the methodology). Our decomposition analysis, as summarized in Figure A2.11, indicates that the scarring effects have reduced post-pandemic Philippine potential growth by 1.69 percentage points on average for 2022-2024, mainly because of the lower growth in physical capital stock (1.12 percentage points), TFP (0.39 percentage points) – presumably due to temporary productivity drops, underutilization and efficiency loss – and human capital (0.17 percentage points) attributed to lower returns on education caused by the pandemic.

Figure A2.9. Potential Growth with Scarring Effects (Actual Scenario)



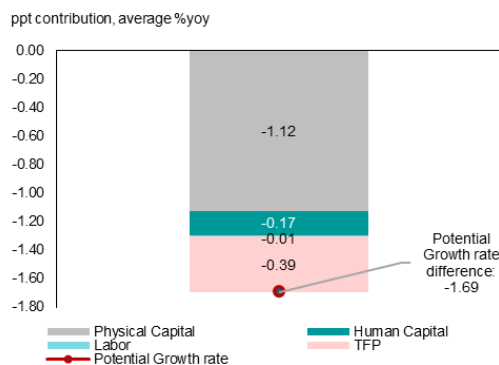
Source: PSA; PWT; UNDP; AMRO staff calculations
Note: The shaded area represents the post-pandemic period of 2022-2024. 2024 figures are forecasts.

Figure A2.10. Potential Growth without Scarring Effects (Counterfactual: Pre-pandemic Trend)



Source: PSA; PWT; UNDP; AMRO staff calculations
Note: The shaded area represents the post-pandemic period of 2022-2024. 2024 figures are forecasts.

Figure A2.11. Contribution to Scarring Effects in Post-pandemic Period (Average for 2022-2024)



Source: PSA; PWT; UNDP; AMRO staff calculations
Note: 2024 figures are forecasts.

Implications for Long-term Philippine Growth

8. This study identifies the sources of scarring effects that lowered potential growth in the post-pandemic period, shedding light on policy suggestions to improve long-term potential growth. The slower growth in physical capital stock, human capital and TFP mainly drove the Philippines’ lower post-pandemic potential growth. Therefore, to reduce the impact of the scarring effects on long-term growth potential, the economy should attract more

investment, improve access to financing especially for MSMEs, upgrade productivity, improve job quality and upskill the labor force. In particular, the following areas could be considered:

- **Attracting more investment:** The authorities should strategically attract foreign direct investment requiring technology and knowledge, and the country should seize the opportunity to draw more FDIs and technology transfer under the framework of the trilateral agreement with the U.S. and Japan. Ways of attracting more investment include building better infrastructure,¹³¹ continuing regulatory framework reform, fostering a competitive business environment, promoting digitalization and innovation, and developing a sustainable economy.
- **Improving access to financing for MSMEs:** The authorities should introduce measures to help businesses, especially MSMEs, repair their balance sheets and improve their access to funding, which will help them address existing vulnerabilities and initiate new investments. In the short term, such measures may include incentives for temporary loan restructuring, which should help distressed firms to repair their balance sheets (AMRO, 2024a). In the longer term, the government should improve the funding environment for MSMEs. AMRO welcomes the BSP's active initiatives to improve MSME access to bank financing. For instance, the authorities' new Philippine Open Finance Pilot, which focuses on MSME borrowers and offers an option for credit data, is also the step in the right direction to enhance MSMEs' financial access.
- **Upgrading productivity and improving job quality:** The authorities should implement policies to upgrade labor productivity and create more quality jobs. To achieve this, policies should focus on diversifying the economy by incentivizing investment in high-productivity sectors, such as manufacturing, digital services, and agribusiness. The development of these sectors will lead to the creation of more formal and stable jobs. Furthermore, additional efforts are needed to attract foreign investment and ensure that it promotes innovation and R&D, which can drive the growth of knowledge-based industries while facilitating the transfer of skills and knowledge to the local workforce, further stimulating quality job creation.¹³²
- **Upskilling the labor force:** The authorities should expand the existing technical and vocational education framework, such as the Technical Education and Skills Development Authority's (TESDA) technical and vocational education and training (TVET) programs. Particularly, the scope of training should be expanded from employability to more technology upgrading. Additionally, expanding digital skills training programs will help workers in sectors affected by automation and artificial intelligence (AI) make the transition to new roles within the digital economy. Such an initiative should include promoting digital literacy at all levels of education and providing resources for lifelong learning and adult education. Moreover, the government should collaborate closely with industries and training providers, such as universities and training institutions, to formulate training frameworks and implement plans to ensure the supply of skilled labor aligns with industry demand and that job matching is provided to students after the training.

¹³¹ Infrastructure investment can also directly increase GDP. A rise in public investment would result in a 9.5 percent cumulative increase in real GDP relative to the steady state after 15 years, while improving public investment efficiency to about 85 percent would increase output by 2.1 percentage points after 15 years (Komatsuzaki, 2019).

¹³² Revitalizing the agricultural sector is equally important and can be achieved through investments in modern farming techniques, improved market access, and financial support for smallholder farmers. Such initiatives will enhance productivity and create employment opportunities.

Box A2.1. Estimation of Potential Growth and Scarring Effects

Estimating potential output and potential growth

This study applies growth accounting by assuming the augmented Cobb-Douglas production function, and uses HP-filtered factors of production to estimate potential output and potential growth (growth of potential output).

The augmented Cobb-Douglas production function is used, as human capital is separately added to the conventional Cobb-Douglas production function, which covers only labor, physical capital and total factor productivity.

$$Y_t = A_t K_t^{1-\alpha} (L_t H_t)^\alpha$$

$$H_t = \exp(\varphi_t S_t)$$

where

- Y_t represents GDP in year t ;
- A_t , total factor productivity (TFP);
- K_t , physical capital stock;
- L_t , the labor component;
- H_t , the human capital per worker;
- α , the income share of labor;
- $(1 - \alpha)$, the income share of capital;
- φ_t , the return on education; and
- S_t , expected years of schooling.

Remarks:

- i. H_t is defined as a function of expected years of schooling (S_t) and the return on education (φ_t);
- ii. The augmented Cobb-Douglas production function applies the Cobb-Douglas function's standard assumption with constant income shares over time for labor (with human capital, α) and capital ($1 - \alpha$).

The potential level of employment, human capital stock, physical capital stock and TFP are inserted into the above augmented Cobb-Douglas production function to estimate potential output and growth. The potential levels of these factors of production are derived by applying the one-sided Hodrick- Prescott (HP) filter on the original series. For potential TFP growth, the rolling five-year average growth of potential TFP is used.

Finally, potential GDP growth, defined as the growth of potential output, is estimated as potential TFP growth plus the weighted sum of the growth in potential employment, potential human capital stock and potential physical capital stock.

Estimating scarring effects

Following Jackson and Lu (2023), scarring effects are defined as the differences in potential growth between the counterfactual scenario of potential output in the COVID-19 pandemic that assumes the pre-pandemic trend:

$$Y_{pre,t} = A_{pre,t} K_{pre,t}^{1-\alpha} (L_{pre,t} H_{pre,t})^\alpha$$

and the actual outcome of potential output in the pandemic:

$$Y_{c,t} = A_{c,t} K_{c,t}^{1-\alpha} (L_{c,t} H_{c,t})^\alpha$$

Take the log-difference of the above equations, the sources of scarring effects (differences in potential growth) can be further decomposed by the output deviation based on the estimated production function under two scenarios.

$$\Delta y_t = \Delta a_t + (1 - \alpha)\Delta k_t + \alpha\Delta l_t + \alpha\Delta h_t$$

Data sources

1. Employment: PSA's official data

2. Human capital stock:

- a. Expected years of schooling: UNDP data
- b. Return on education: Until 2019, Psacharopoulos and Patrinos (1994, 2004, 2018) applied linear interpolation and extrapolation to 1988, 1998 and 2000 figures. Assuming no increases during the pandemic period of 2020-2021.

3. Physical capital stock: The data used in this study is constructed by applying the perpetual inventory method (PIM), using 1980 capital stock figures in the Penn World Tables (PWT) 10.1 database as the initial capital stock, gross fixed capital formation in the PSA's official National Account data, and depreciation data in PWT.

4. Labor income share: The labor income share (α) is assumed to be two-thirds of the total income, reflecting the labor-intensive services and manufacturing sectors in the country.

5. TFP: Derived as the difference between observed real GDP and the weighted sum of employment, human capital and physical capital, the last of which is known as Solow residual. Potential TFP is derived by applying the one-sided HP filter. The rolling five-year average growth of potential TFP is used to estimate potential TFP growth until 2021 while assuming a slight increase in 2023-2024 to be consistent with the economic recovery.

Box A2.2. Selected Local News and Literature on the Impact of COVID-19 on TFP

News and literature about employment

About 4.5 million Filipinos lost their jobs in 2020.¹³³ The unemployment rate stood at 10.3%, the highest in 15 years, the government reported, due to the COVID-19 pandemic and the lockdown shuttering thousands of businesses. But as quarantine restrictions were lifted and the economy reopened to allow workers to return to their jobs, the jobless rate also eased to 8.7% in October, National Statistician Dennis Mapa said on December 3, 2020. He cited the latest preliminary results of the Philippine Statistics Authority's quarterly labor force survey. (<https://www.straitstimes.com/asia/se-asia/philippines-suffers-worst-job-losses-in-15-years-due-to-covid-19-and-lockdown>)

As the country's unemployment rate continues to drop, the Philippine government remains committed to invigorating investments and implementing key reforms to sustain the positive momentum of the labor market and create more quality jobs for Filipinos, the National Economic and Development Authority said on July 8, 2024. As reported by the Philippines Statistics Authority, the May 2024 Labor Force Survey showed that the unemployment rate had dropped to 4.1%, a decrease from 4.3% in the same month last year. The increase in total employment for May 2024, reaching 48.9 million jobs – up 605,000 from the previous year – was primarily driven by expansion in the industry (+1.2 million) and services (+982,000) sectors. Construction and manufacturing also grew significantly, adding 745,000 and 347,000 jobs, respectively. This growth can be attributed to the implementation of several flagship programs and projects under the Marcos administration. (<https://neda.gov.ph/investments-key-labor-market-reforms-to-boost-job-quality-for-filipinos-neda/>)

A report from the Ateneo Center for Economic Research and Development shows that, by education level, the increase in the number of unemployed in terms of percentage growth was highest among people with only elementary or no education (336%), those with only junior high school education (275%), and those with senior high school education (262%), compared with people who had at least some college education (157%). The same is indicated by looking at employment loss by sector, which shows the highest decline in employment in wholesale and retail trade and repair of motor vehicles (a loss of two million jobs), construction (-1.4 million jobs), and transport and storage (-1 million jobs). Based on previous data, about half of the people employed in these three sectors belong to the poorest 50% of households, which means their income situation is precarious and they are vulnerable to any loss of income. In an ongoing study, using Monte Carlo simulations, the Ateneo center estimated that if 8.4 million self-employed workers and "non-regular" workers became jobless during the lockdown months, and if employment recovery was gradual such that only two-thirds of the 8.4 million were able to recover their jobs by the end of the year, poverty incidence would go up by 5.7 percentage points from the pre-COVID baseline, equivalent to an additional 1.4 million poor households, or 7.5 million poor individuals. (Ducanes, G. M. 2020. "A Closer Look at the Impact of COVID-19 and the Lockdown on Employment and Poverty," *Policy Brief*, June 2020, Ateneo Center for Economic Research and Development, Ateneo De Mainly University)

The pandemic has affected employment in the Philippines and reversed some gains, wiping out 1.7 million wage and salary jobs in the 12 months to January 2021. In contrast, employment in the informal sector rose by about 435,000. The pandemic could create long-lasting effects on employment. Put simply, this temporary large shock to the economy might produce a persistently lower employment rate even after the economy has started to grow again. This phenomenon is known as hysteresis in employment. There are three transmission channels of the pandemic on modern employment.

First, the number of jobseekers will be higher, including people who have lost their jobs, school dropouts and new entrants to the labor market. The longer laid-off workers and new labor market entrants remain unemployed, the more likely they would become less employable in the future because of lost skills.

Second, the pandemic has triggered a large reallocation of jobs across sectors. While job losses have occurred across most sectors, the hardest-hit are businesses dependent on personal contact, such as accommodation, food services, transport and recreational services. In contrast, the sectors that recover quickly and present positive job growth are those that tend to absorb a lower share of labor, such as communications and technology and several higher-skilled services. While a portion of these jobs will return as the economy bounces back, we expect this change in the employment composition to persist in the medium to long term. This divergence will increase skill mismatches in the labor market, as workers do not switch easily between sectors given differences in required skills and experiences.

Third, companies are modifying their business models to rely more on technology, thereby reshaping their workforces and the types of skills demanded. Digital transformation and remote working will transform jobs, facilities, processes and skill needs, including skills required for higher value-added services. These will further exacerbate the skill mismatch in the labor market.

(<https://blogs.adb.org/blog/philippines-covid-19-employment-challenge-labor-market-programs-to-rescue>)

News and literature about human capital loss

Learning poverty – the share of 10-year-old children who cannot read and understand a simple story – in the Philippines was estimated at 69.5% in 2019 and is expected to rise further due to the pandemic. School closures and long-term learning loss are also likely to affect the

¹³³ Some of these individuals may have only entered the labor force in 2020.

children's economic potential and productivity in adulthood, thus undermining the country's competitiveness. It is estimated that due to learning losses, average annual earnings per student will decrease by USD893-USD1,137 (in 2017 PPP\$), equivalent to a loss of USD16,287-USD20,752 (in 2017 PPP\$) in the present value of individual lifetime earnings.
(World Bank Group. 2021. *Philippine Basic Education System: Strengthening Effective Learning During the COVID-19 Pandemic and beyond.*)

According to World Bank Senior Adviser for Education Harry Patrinos in February 2024, for every week of school closure, learning levels decline by almost 1 percent, so "20 weeks closed translates to losing almost a year's worth of learning."
(<https://www.pids.gov.ph/details/news/press-releases/covid-19-school-closures-led-to-significant-learning-losses-says-world-bank-expert>)

Learning poverty, as defined by the World Bank, means being unable to read and understand a simple text or story by age 10. A 2019 pre-pandemic World Bank study put the Philippines' learning poverty at 69.5%. In 2021, however, it increased to 91%, meaning nine out of 10 Filipino children under the age of 10 were unable to read a simple text. This makes the Philippines the country with the highest level of learning poverty in East Asia and the Pacific region, according to the World Bank.
(World Bank, (2022). *Philippines' Learning Poverty Brief.*)

A bill on Academic Recovery and Accessible Learning (ARAL) was approved and aims to establish a national learning intervention program. The bill will establish well-systematized tutorial sessions and well-designed intervention plans that provides learners with optimal time to master essential learning competencies and make up for learning losses. It will focus on essential learning competencies in language and mathematics at grades 1-10 and in science at grades 3-10. The ARAL program shall also focus on strengthening the numeracy and literacy skills of kindergarteners. It covers public school learners who did not enroll at the start of the 2020-2021 school year, and those who are below minimum proficiency levels as required in language, mathematics and science. Private school learners may also avail themselves of the interventions provided under the program.
(<https://legacy.senate.gov.ph/lisdata/40147373721.pdf>)

World Bank simulations in 2020 expected to see a global loss of 0.9 learning-adjusted years of schooling (LAYS), driving down the global average from 7.8 LAYS to 6.9 LAYS. Under this scenario, a typical student would lose USD25,000 in lifetime earnings in present value terms, while the current generation of students could lose an estimated USD16 trillion in earnings. Given that duration of school closures, learning poverty was expected to increase by 10 percentage points, reaching 63%. In a pessimistic scenario, learning poverty is expected to increase to as much as 70% in low and middle-income countries.
(UNESCO, UNICEF and World Bank. 2021. *The state of the global education crisis: A Path to Recovery*, a joint UNESCO, UNICEF and World Bank Report.)

A report from the Congressional Policy and Budget Research Department shows an average estimated loss of 0.37 in the LAYS of ASEAN member states (AMS), thereby indicating a 4.31% decline from the 2020 baseline AMS LAYS average of 8.55 years. Myanmar, Malaysia and the Philippines all have greater respective LAYS losses, of 0.77, 0.67 and 0.61 years, than the AMS average. On the other hand, Singapore, Brunei Darussalam and Vietnam have the least LAYS losses, of 0.10, 0.15 and 0.20, respectively. Studies have established that a person's annual earnings increased by 9.7% on average for every additional year of schooling. However, school closures put this potential on hold and even adversely affected most students. The report shows that in AMS, the potential earning losses per student per year is an estimated USD173, a 1.9% decline from the 2020 baseline earnings potential. Malaysia and Myanmar are estimated to lose 6.4% and 7.6%, respectively, more than thrice and about four times the AMS' 1.9% average decline. Indonesia and the Philippines, meanwhile, trail at 3.8%. The annual earnings per student of the other AMS are estimated to dip by less than 2%, with Singapore reflecting the least drop, of 0.9%.
The report also shows the AMS learning poverty rates in 2019 and 2021, indicating an average increase of 26 percentage points due to school closures at the height of the pandemic. Lao PDR, Cambodia, the Philippines and Myanmar are assessed to have very high learning poverty rates in 2021, ranging from 89% to 98%. Cambodia and Malaysia posted spikes of 39% and 30%, respectively, in learning poverty rates, way above the AMS average hike of 26%. Singapore and Vietnam not only have the lowest AMS learning poverty rates, of 3% and 2%, respectively, but were unaffected at all during the 2019 and 2021 reference periods, even under the pandemic.
(Congressional Policy and Budget Research Department. 2022. "The Cost of Learning Loss from the COVID-19 Pandemic," *Fact in Figure*, May 2022, No 32.)

By the ADB's estimates, students in Asia who were affected by the closures of their schools potentially lost about USD180 of annual income due to COVID-19, with some regions experiencing higher percentage declines than others. For example, East Asia saw USD771 less in annual earnings due to protracted school closures.
(<https://www.adb.org/sites/default/files/publication/692111/ado2021-special-topic.pdf>)

News and literature about lower labor income

Households continued to experience income losses. One in four household heads were still without work in December 2020 despite a rebound in employment. Job recovery among female household heads was not on par with their male counterparts. The share of female heads working in December was 66 percent, about 6 percentage points less than March, which was before the pandemic. While employment improved slightly, the usual working arrangements had not resumed. Resumption of work (one in four household heads) was nearly the same as the pre-COVID rate in March. The share of household heads employed in the services sector rebounded to 46%, slightly higher than the pre-COVID level of 43%. About three in five household heads with non-agriculture jobs reported they had returned to their usual working arrangements, an increase from only a third in August.
(<https://thedocs.worldbank.org/en/doc/ab24c2a718fb53a344c5942d236b2fe6-0070062021/original/Philippines-COVID-19-High-Frequency-Survey-Household-Results-Slides.pdf>)

The decrease in income, or worse, the loss of income, of millions of Filipino workers translate to a higher poverty incidence as well as subsistence incidence in the country. Poverty incidence, according to the PSA, is the proportion of Filipinos whose per capita income is insufficient to meet their basic food and non-food needs, while subsistence incidence is the proportion of Filipinos whose income is not enough to cover even basic food needs. Poverty incidence in the first semester of 2021 was estimated at 23.7%, equivalent to 26.14 million Filipinos, while those in subsistence incidence registered 9.9%, or 10.94 million Filipinos. While the pandemic affected all workers, it also exposed the vulnerability of some sectors. The jobs of vulnerable workers are unstable, lack formal work arrangements, and do not have social or legal protections, thus their incomes are usually low. They are also described as having a higher risk of getting injured, harmed or ill as a result of working in a more dangerous setting. These workers are usually associated with the informal economy, which the International Labour Organization (ILO) defines as independent, self-employed small-scale producers and distributors of goods and services. A 2020 study by the ILO on the impact of COVID-19 on the labor market of the Philippines revealed that people working in manufacturing, transport and storage, accommodation and food services activities, arts, entertainment and recreation and tourism had a higher risk of being displaced.
(Ronahlee A. Asuncion. 2022. "Mitigating the Covid-19 Pandemic Impact on the Philippine Labor Market," *Japan Labor Issues*, vol.6, no.40, pp. 75-85)

News and literature about productivity, underutilization and efficiency

The Philippines' public infrastructure investment is lower than its neighbors. The persistently low public investment has resulted in low public capital stock relative to other ASEAN countries. In the baseline scenario, which models the Duterte administration's infrastructure scale-up plan and comprehensive tax reform, the increase in public investment results in a 9.5% cumulative increase in real GDP relative to the steady state after 15 years. If no further tax reform takes place after the legislation that was passed in December 2017, the same public investment infrastructure increase would need to be financed by running higher deficits. Sustained output growth is realized in this alternative scenario as well, but the size is smaller due to the negative effects of higher borrowing costs from greater public debt. Separately, improving public investment efficiency has substantial additional benefits. Eliminating half of the inefficiency would lead to an additional 2.1 percentage points in real GDP.
(Komatsuzaki, T. 2019. "Improving Public Infrastructure in the Philippines," *Asian Development Review*, vol. 36, no. 2, pp. 159-184)

One quarter of total employment in the Philippines is likely to be disrupted by the impact of COVID-19 on the economy and labor market, either through decreased earnings and working hours or a complete job loss. This translates to about 10.9 million workers. Women account for 38% of the jobs at risk of COVID-19 disruption. The sectors facing a medium risk of job disruption are those that are temporarily halted by the lockdown but may recover after a transition period. These include water supply and waste management activities; construction; wholesale and retail trade; information and communication; financial and insurance activities; real estate activities; and professional and scientific services.

(https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@asia/@ro-bangkok/@ilo-manila/documents/publication/wcms_762209.pdf)

The Department of Labor and Employment has generated more than half of its job generation goals under the National Employment Recovery Strategy (NERS). The NERS program seeks to generate one million jobs from the private sector and 200,000 jobs from the government sector. It started operations in May 2021, in an effort to precipitate the recovery of the labor market by creating a policy environment that encouraged generation of, and improved access to, employment, livelihoods and training opportunities; improvement of the employability, wellness and productivity of workers; and provision of support to existing and emerging businesses. The strategy will be implemented until 2022 in response to the effects of the pandemic.

(<https://www.bworldonline.com/economy/2021/10/11/402790/dole-says-employment-program-has-put-780000-to-work/>)

Informal-sector workers who have temporarily lost their livelihoods due to stepped-up community quarantine in Luzon can apply for the Department of Labor and Employment's temporary employment program. The department has set aside PHP180 million in an emergency employment program under Tulong Pangkabuhayan sa Displaced/Underprivileged Workers (TUPAD), which will be offered to 16,000 informal-sector workers.

(<https://www.qmanetwork.com/news/topstories/nation/730280/temporary-jobs-offered-by-dole-for-workers-displaced-due-to-luzon-quarantine>)

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